



United States
Department of
Agriculture

Forest
Service

Umatilla
National
Forest

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File Black

*Send to
Blue
Bird*

File Code: 2160
Route To:

Date: April 14, 2003

Subject: Request for a Removal Action at the Blue Bird and Black Jack Abandoned Mines,
Ukiah Ranger District, Umatilla National Forest

To: Regional Forester, R6

I PURPOSE

The purpose of this Action Memo is to request and document approval of the proposed time-critical removal action described in the enclosed Blue Bird Abandoned Mine and Black Jack Abandoned Mine reports, for the replacement of the Blue Bird portal plug and drain pipes, and the replacement of the Black Jack drain pipes. These mines are located on Clear Creek, approximately 5 miles from the town of Granite, in Grant County, Oregon (Appendix A, Figures 1 - 4). This is a non-NPL site, and there are no nationally significant issues associated with it. Refer to the attached reports for specific data, maps and photos of these sites.

II SITE CONDITIONS AND BACKGROUND

A Site Description

1. Removal Site Evaluation

This is a time-critical removal action, and it is not listed on the NPL. The sites are two historic abandoned mines with discharge water containing concentrations of iron, arsenic and antimony that exceed the Environmental Protection Agency's Region 9 Preliminary Remediation Goals for these chemicals, and they pose a threat to humans and the environment. The effluent of these mines historically discharged directly to Clear Creek, which is habitat for Columbia River bull trout, Mid Columbia River steelhead trout, and Snake River Fall Chinook salmon.

Forest Service personnel installed a wood, sand, and plastic lined plug in the Blue Bird in 1988 (Appendix B). This plug also has a pipe system that directs mine discharge to another settling pond and wetland area; however, this wetland area is located on private land. This work was not done under contract, and there is no file on this facility. The engineer (retired) who installed this plug described its construction in a personal communication, but also stated that to his knowledge, no agreement with the private landowner was ever secured. The installation apparently was done with the private landowner's verbal agreement only. The current landowner purchased this property after the pipe installation. An historic mine on the private landowner's property also discharges to this wetland area.



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The Umatilla National Forest installed a portal plug in the Black Jack mine in 1983, with the intent of stopping all mine water discharge. However, that facility was replaced with a plug and drain pipe system to direct water to an historic placer settling pond and wetland area (Appendix C). This work was done under contract, and there is an extensive file on this site at the Umatilla Forest Supervisor's Office in Pendleton, Oregon.

These wetland areas satisfy the Oregon Department of Environmental Quality (DEQ) as an acceptable treatment of these mine effluents. However, the Blue Bird portal plug has failed, the Blue Bird pipes have shifted and are in danger of failing, and both the Blue Bird and Black Jack pipe systems periodically clog resulting in water discharge to Clear Creek. Repairing the Blue Bird portal plug, and replacing both mine pipes before additional unacceptable discharges occur is the intended removal action. Replacing the Blue Bird plug and pipe systems is a higher priority than replacing the Black Jack pipe system.

2. Physical Location (Appendix A, Figures 1-4)

The site is located within the Umatilla National Forest in the vicinity of historic mining and milling operations along Clear Creek. The adjacent lands are NFS and private; the private lands are patented mining claims. The town of Granite is 6 miles northeast of these sites, along Forest Service Arterial Road 13. The portals are located within 300 feet of Clear Creek, both pipe systems cross under Clear Creek and the Forest road, and discharge to man-made wetlands adjacent to the Forest road.

The area was withdrawn from mineral entry on November 29, 1963 under Public Land Order 3271, for the protection of fish habitat, and there are no unpatented mining claims on this portion of Clear Creek.

3. Site History and Characteristics (Appendix D, Summary of Title Search)

These are abandoned hardrock underground mines located adjacent to Clear Creek. The original mining claims associated with the Blue Bird were located in 1897, and those for the Black Jack in 1898; these mines were not in common ownership. Mining activity was most prominent at both locations between 1898 and 1906, when the extent of underground development occurred - 2,500 feet of underground development at the Blue Bird, and 3,000 feet at the Black Jack. The Black Jack never went into production, however, at one time the Blue Bird did produce, and two mills were operated there - a cyanide vat leach mill, and a gravity floatation mill. Production records are non-existent, but a 1916 interview with a local miner indicated that only 1,500 tons worth \$5,000 were produced in 1904 and 1905. These two mines came under joint ownership around 1905, and there was a stock scam run on them, and apparently the owners had left town around 1907. In 1916, the Blue Bird workings had reportedly been inaccessible since 1914. Subsequent published literature only revealed minimal work done at these mines.

Research at the Grant County records office in Canyon City, Oregon, revealed that no further records had been filed there by the original owners after 1903. New claim locations and assessment affidavits were filed for both of these mines by the original locator of the Black Jack starting in 1915, and his widow and administratrix of his estate after his death, up until 1950, but records indicate that only minimal underground clearing and timbering were done in all those years. No further records were located at the county.

The Black Jack portal is open, and the plug and pipe system intact. The small size of the pipe combined with the high concentrations of iron results in frequent clogging and unanticipated opening of any one of several pipe cleanouts. The mine effluent then runs across the mine dump or down the old mine access road, and discharges directly to Clear Creek.

The Blue Bird portal was intentionally filled with mine waste after the plug was installed, and is inaccessible. A surge of unknown quantity of iron rich mine sludge and effluent escaped across the top of this fill and flowed across the old mine dump towards Clear Creek, and the sludge and water did discharge directly to Clear Creek, indicating that some portion of the plug had failed. The clogged pipe was eventually located and cleaned, however, the portion extending beneath Clear Creek is now floating at the surface of the streambed, and exposed to damage by rocks and other debris moving within this stream system.

Historical records indicate that there was a mill at the Blue Bird in 1905 to 1907, and it incorporated the use of cyanide and gravity floatation circuits. Remnants of the mill and small tailings impoundment can still be seen at the site. There is no historical indication that any milling ever occurred at the Black Jack. There are approximately 10,000 tons of mine waste rock located at these sites. These sites are also the subject of Site Investigations scheduled during the 2003 field season.

4. Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant

Preliminary analysis of sediment and mine discharge water indicate chemicals of concern at this site, including iron, arsenic, antimony, and zinc, all of which exceed the Environmental Protection Agency's Region 9 Preliminary Remediation Goals for these chemicals, and arsenic, antimony and zinc would be classified as hazardous substances according to CERCLA Section 101(14) (Appendix E). Preliminary sediment sampling by EPA in 1996 and Forest Service in 1999 and 2002 (excerpts enclosed) found arsenic between 50 and 70 mg/kg, iron in excess of 500,000 mg/kg, and antimony at 724 mg/kg. Water sampling indicated dissolved arsenic at 8.1 micrograms/liter, iron over 15,000 mg/l, and zinc at 176 mg/l.

Continued maintenance of these pipe systems is required, however, they are in a deteriorated condition, and further failures of these systems will likely result in discharge of water and sediment containing these chemicals of concern to Clear Creek.

5. National Priorities List Status

The site has not been proposed for the National Priorities List, and a Hazard Ranking System rating has not been calculated.

6. Additional Site Information

Detailed information including maps, photos and figures are included in the attached report.

B. Other Actions To Date

In the late 1980s, the Umatilla National Forest installed portal plugs and drain pipes to channel the mine effluent to man-made wetlands. This was not done under CERCLA authority. No other removal actions have occurred at this site.

C. State And Local Authorities' Roles

1. State and Local Actions to Date

The Oregon Department of Environmental Quality (DEQ) has been actively involved in this project, and a request for Applicable or Relevant and Appropriate Requirements (ARARs) was sent to them on February 21, 2003. The Forest Supervisor requested a reply from DEQ within 10 days, however, there has been no response from DEQ. Consequently, a list of ARARs generated internally is included with this report.

2. Potential for Continued State/Local Response

The Oregon DEQ has been invited to be actively involved in this project, however, their response to that invitation has been non-committal.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public Health or Welfare

A Human Health Risk Assessment has not been completed for this site.

B. Threats to the Environment

There is a threat to public health or welfare as set forth in the National Oil and Hazardous Substance Pollution Contingency Plan (NCP) (40 CFR 300.415(b)(2)) as follows:

Three fish species listed as threatened under the Endangered Species Act occupy Clear Creek and/or its downstream reached immediately adjacent to both of these mines. These and other aquatic species may be exposed to the elevated levels of arsenic, iron, antimony and zinc through ingestion and these chemicals dissolve and suspended in the mine effluent in the event that these pipes clog.

Oregon DEQ has been supportive of the replacement of these pipes and the repair of the Blue Bird portal plug.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

1. Proposal

This will be a time-critical removal action, and therefore an Engineering Evaluation / Cost Assessment (EE/CA) has not been completed.

Blue Bird: This will be a repair of an existing failed system, involving the excavation and replacement of the existing wooden plug. The old plug will be replaced with a concrete dam that will be of a design that channels water to an adequate wetlands area on National Forest System (NFS) lands. This dam will also interact with the mine opening to create an air lock so that oxygen flow into the mine will be severely curtailed. The pipes will be replaced with larger (10") pipes, but will be rerouted so that continued discharge will be directed to NFS lands instead of private lands (Appendix A, Figure 3). This pipe system will also have a safety feature so that if the pipes clog in the future, mine discharge will be diverted to an existing settling pond while the pipes are being cleaned out, instead of allowing pressure to build up and damage the dam and pipes. This will involve excavation of a three-foot deep channel across Clear Creek and through the county road to access the ponds for long-term settlement and plant uptake.

Black Jack: The Black Jack's portal plug will remain as is, and the pipes will be replaced with larger (10") pipes along the current pipe route (Appendix A, Figure 4). In addition, should sufficient funds become available, the lower portal on the Black Jack property (Grey Rock mine) would receive the same dam as proposed for the Blue Bird, and its pipes will connect to the Black Jack pipes prior to crossing Clear Creek.

Following plug and pipe replacement, a schedule for regular, biannual cleaning of these pipes will be developed, using an appropriate size and type of cleaning bit. The Baker City Public Works Department currently has the equipment to perform this activity, and has done so in the past. A new bit will be required, and purchased by the Umatilla National Forest exclusively for this purpose.

2. ARARs

The Applicable or Relevant and Appropriate Requirements (ARARs) considered for this action are listed in Table 1 in Appendix F. Table 1 also indicates which ARARs were selected as Applicable, which were Relevant and Appropriate, and which will receive no further consideration. Note that ARARs were requested from Oregon DEQ, but were not received for this site, therefore the ARARs in the table below were developed internally.

Table of Applicable or Relevant and Appropriate Requirements¹
That will apply to this site.

Standard, Requirement, Criteria, or Limitation	Description	Applicable/Relevant and Appropriate?
FEDERAL		
Preliminary Remediation Goals (PRGs) for soil and water	PRGs are tools for evaluating and cleaning up contaminated sites. They are risk-based concentrations that are intended to assist risk assessors and others in initial screening-level evaluations of environmental measurements. They are agency guidelines.	Relevant and Appropriate Requirement, re-connecting to existing pond-filtering system to keep mine effluent from direct discharge to Clear Creek.
Archaeological and Historic Preservation Act	Establishes procedures to provide for preservation of significant scientific, prehistoric, historic, and archeological data that might be destroyed through alteration of terrain as a result of a Federal construction project or a Federally licensed activity or program.	Relevant and Appropriate Requirement, possible archaeological artifacts on site.
Protection of Wetlands Executive Order No. 11990	Avoid adverse impacts associated with the destruction or loss of wetlands and avoid support of new construction in wetlands if a practicable alternative exists.	Relevant and Appropriate Requirement, no designated wetlands at this location, but excavations in the floodplain will occur.
Dredge and Fill Regulations	Prohibits discharge of dredged or fill material into waters of the United States without a permit	Applicable Requirement, excavations will occur in Clear Creek, which contains species of Columbia River bull trout, Mid Columbia River steelhead trout, and Snake River Fall Chinook salmon
Fish and Wildlife Coordination Act	Requires consultation when Federal department or agency proposes or authorizes any modification of any stream or other water body to assure adequate protection of fish and wildlife resources.	Applicable Requirement, excavations will occur in Clear Creek, which contains species of Columbia River bull trout, Mid Columbia River steelhead trout, and Snake River Fall Chinook salmon
Endangered Species Act	Requires Federal agencies to evaluate the potential effects of actions they may take in a floodplain to avoid the adverse impacts associated with direct and indirect development of a floodplain to the extent possible.	Applicable Requirement, excavations in the floodplain will occur.
Floodplain Management Executive Order No. 11988	Requires Federal agencies to evaluate the potential effects of actions they may take in a floodplain to avoid the adverse impacts associated with direct and indirect development of a floodplain to the extent possible.	Applicable Requirement, excavations in the floodplain will occur.
Clean Water Act		
National Pollutant Discharge Elimination System	In general, Part 122 provides permit requirements for the discharge of pollutants from any point source into waters of the United States. Part 122.26 requires permits for storm-water discharges.	Applicable Requirement

Standard, Requirement Criteria, or Limitation	Description	Applicable/Relevant and Appropriate?
STATE OF OREGON		
Hazardous Substance Occupational Exposure	Establishes OR-OSHA Permissible Exposure Limits (PELs). OR-OSHA exposure limits mirror the federal chemical specific limits (refer to NIOSH Pocket Guide to Chemical Hazards for details on individual chemicals)	Applicable Requirement
Oregon Soil Cleanup Rules for Simple Sites	Establishes DEQ rules for streamlined cleanup processes and numerical cleanup standards at simple sites.	To Be Considered
State of Oregon is authorized by the USEPA to implement the Clean Water Act in Oregon	Establishes acceptable contaminant levels for ingestion of aquatic organisms and for intake by aquatic organisms in surface water.	Applicable Requirement
Fugitive Dust Emissions	Establishes standards for PM-10	Applicable Requirement

Refer to full ARAR Table in Appendix F.

The proposed action will address all of the substantive aspects of these ARARs. Best Management Practices will be employed in consideration of archaeological resources, and floodplains and wetlands mitigations during excavation and construction. Excavations within Clear Creek are not expected to exceed 30 cubic yards of material, but precautions to contain this excavated material will be employed. Consultation has been initiated with both National Marine Fisheries Service and US Fish and Wildlife Service, proposing that this project would have a May Affect, Not Likely To Adversely Affect call for the listed species. Although the consultation process is not complete, nor does it appear that it will be complete in time for this project, both of these two agencies will be invited to participate in the design and planning process. Under the terms of CERCLA, no NPDES permit will be necessary. However, the point of discharge will be into a dredge pond, which allows discharge water to filter through the inert dredge tailings before reaching Clear Creek, which will aid in complying with the Preliminary Remediation Goals. This is the system that was developed and employed at this site since 1988, and the pond and vegetation have been functioning properly. Only the Blue Bird pipes and portal bulkhead, and the Black Jack pipes are not functioning properly. This effort is to prevent any future discharges to Clear Creek directly from the mine.

Even though the State of Oregon did not respond to the Forest Service request for ARARs, the anticipated State ARARs are included here. Of those ARARs not already addressed under the Federal ARARs discussion, these will be addressed using Best Management Practices during excavation and construction.

3. Project Schedule

TASKS	DURATION	START	FINISH
Action Memo Approval	15	4/1/2003	4/15/2003
Engineering Design & Approval	30	3/15/2003	4/15/2003
Contractor Bids	30	4/15/2003	5/15/2003
Removal Action	30	7/15/2003	8/15/2003

B. Estimated Costs

The estimated cost for replacing the Blue Bird portal plug and pipe system is \$150,000. This includes excavation at the portal, removal of existing plug and old pipe section below Clear Creek, installation of new portal plug, excavation of new pipe trench from the portal to the NFS ponds, installation of safety relief system so that any future pipe clogs will not result in discharge to Clear Creek, reclamation of the excavation trench, and all contracting and overhead expenses. All work will be done according to OSHA worker safety standards.

The estimated cost for replacing the Black Jack pipe system is \$100,000, and includes all activities listed for the Blue Bird with the exception of the portal plug. An additional \$50,000 could be used to add the lower Black Jack portal to this system, however, a new plug would need to be installed in this collapsed portal (refer to Photo #4 in Appendix C).

A breakdown and more accurate cost estimates will be developed with the contract for this project.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

The risk of a release of hazardous substances to the environment will increase above its already high-risk state. A release has already occurred at the Blue Bird, and any clog of that pipe system will result in immediate discharge to Clear Creek. The current Blue Bird pipe across Clear Creek is exposed to impact and freezing, and any rupture will result in direct mine discharge to Clear Creek.

The Black Jack mine pipe system is more stable, but at risk of failure due to its inadequate size.

VII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues.

VIII. ENFORCEMENT

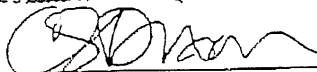
A search for Potentially Responsible Parties (PRPs) was conducted. Several operators and corporations were identified, associated with this historic operation; however, none of the operators or the corporations involved could be located.

IX. RECOMMENDATION

This decision document represents the selected time-critical removal action for the Blue Bird and Black Jack pipe system, in Grant County on the Umatilla National Forest, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the Administrative Record for the site.

Conditions at the site meet NCP section 300.415(b)(2) criteria for a time-critical removal and I recommend your approval of the proposed removal action.

Recommended:



CRAIG SMITH-DIXON

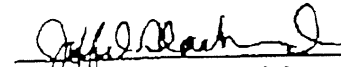
District Ranger

Ukiah Ranger District

4-14-03

Date

Recommended:



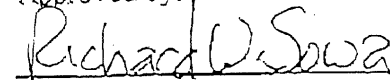
JEFF D. BLACKWOOD

Forest Supervisor

4/15/03

Date

Approved by:



RICHARD W. SOWA

Director of Engineering

Pacific Northwest Region

4/27/03

Date

X. APPENDIXES

cc: Richard Sowa